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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CHUNDURU, SURYAPRABHA

ART UNIT	PAPER NUMBER
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1656

9

DATE MAILED: 02 04 2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/423,575

Applicant(s)

SMEEKENS ET AL.

Examiner

Suryaprabha Chunduru

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 5-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's election with traverse of Group I (claims 1-4) in Paper No. 8 is acknowledged.

The traversal is on the ground(s) that there is no undue burden upon examiner to examine all the claims in all the six Groups. This is not found persuasive because the category X reference cited in International Search Report (Quaadvlieg et al.) is with respect to the claims in Group claims and I are grouped based on broadest claims as claim 1. Category X reference anticipates claim 1 and lacks special technical feature, which binds all other claims. Further, burden of search is not a requirement for the lack of unity. Thus the restriction requirement is still deemed proper.

2. Claims 1-4 in Group I will be considered in this office action for examination.

3. The disclosure is objected because of the following informalities:

The Oath/Declaration is not in permanent ink, or its equivalent in quality, as required under 37 CFR 1.52(a).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01.

Method claims require a last step or phrase in the last step that states the accomplishment of the goals for the method, which were stated in the method's preamble. Claim 1 lacks such a last step (how a modification of flowering in plants is accomplished) and is confusing because

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the additional method step is not sufficiently set forth. While minute details are not required in method claims, at least the basic steps must be recited in a positive, active fashion. See Ex parte Erlich, 3 USPQ2d1011, p.1011 (Bd. Pat. App. Int. 1986). It is suggested that an amended claim more clearly describing the intended steps be submitted.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Quaedvlieg et al.

(Plant Cell, vol. 7: 117-129, 1995).

Quaedvlieg et al. teach a process for modifying flowering in plants wherein Quaedvlieg et al. disclose that the method comprises transforming the plants (*Arabidopsis*) with a construct comprising coding region of *ATH1* gene under the control of the constitutive cauliflower mosaic virus 35S promoter (see page 124, column 1, paragraph 2, column 2, paragraph 2, and page 123, Fig. 9). Thus the disclosure of Quaedvlieg et al. meets the limitations in the instant claim 1.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quaedvlieg et al. (Plant Cell, vol. 7: 117-129, 1995) and in view of Coupland et al. (WO 96/14414).

Quaedvlieg et al. teach a process for modifying flowering in plants wherein Quaedvlieg et al. disclose that the method comprises transforming the plants (*Arabidopsis*) with a construct comprising coding region of *ATH1* gene under the control of the constitutive cauliflower mosaic virus 35S promoter (see page 124, column 1, paragraph 2, column 2, paragraph 2, and page 123, Fig. 9). However, Quaedvlieg et al. did not teach a construct that inhibits production of *ATH1* protein express antisense RNA, a recombinant *ATH1*.

Coupland et al. teach a method for modifying or influencing flowering in plants wherein Coupland et al. disclose that the method comprises allowing to express antisense RNA transcription from nucleic acid of the construct (see page 73-74, claim 27) recombinant DNA (see page 73, lines 12-21, claims 25 and 26) inhibits the production of protein thereby delays flowering (see page 73, lines 12-21, page 70, lines 19-22, and page 71, line 1).

Therefore, it would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made, to modify a process for modifying flowering comprising

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ATH1 gene in plants as taught by Quaedvlieg et al. with the method of influencing or modifying flowering in plants as taught by Coupland et al. to achieve expected advantage of modifying flowering in plants by ATH1 gene construct because Quaedvlieg et al. states that "novel screening methods have permitted the isolation of mutants with specifically altered expression of light-regulated genes in the absence of morphological changes. The gene products of the mutated genes again appear to be involved in the signaling pathways. Recently, it was shown that the expression patterns of a family of homeobox genes in maize define regions in the vegetative segmentation unit, implying that homeobox genes both in plants and animals have properties that make them suited for the role of defining cell fate" (see page 118, column 1, lines 8-13 and 41-48). One such gene product that effects vegetative growth, expressly motivated by Coupland et al. is to use of a construct that influences flowering in plants, to provide "a method for advancing or retarding the onset of timing of flowering which can be useful to farmers and seed producers." (see page 1, lines 9-13). An ordinary practitioner would have been motivated to combine the method of Quaedvlieg et al. with the method of Coupland et al. in order to achieve the expected advantage of developing a sensitive method for modifying flowering in plants.

No claims are allowable.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suryaprabha Chunduru whose telephone number is 703-305-1004. The examiner can normally be reached on 8.30A.M. - 4.30P.M. Mon - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 703-308-1119. The fax phone numbers for the


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organization where this application or proceeding is assigned are 703-308-0294 for regular communications and - for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.


Suryaprabha Chunduru
January 29, 2002


JEFFREY FREDMAN
PRIMARY EXAMINER